

Unit Effectiveness Plan for 2001-2002
Department(Unit): Biology
College (Division): Dean - College of Science

Unit Mission or Purpose:

The Department of Biology is dedicated to the University mission of teaching, research and service. Our goals are to provide rigorous, modern training in the biosciences to undergraduate and graduate students to enable them to pursue directly careers in biology, biomedical and allied health sciences, or enter graduate programs leading to research careers in the biosciences or related medical sciences. Faculty scholarship and research are integral to our mission and improve the quality of our undergraduate and graduate training. Outreach to local public schools and other public institutions serve to promote the University's activities and increase community awareness of the role of science in our society.

Articulation of how unit mission/purpose relates to University mission:

The Department of Biology supports the University mission by preparing students for Bachelor's, Master's and Doctoral degrees in Biology and by providing non-majors training in basic biology and health. The faculty further supports the University mission of dissemination of knowledge, and the social and economic concerns of the state through their outreach and research activities.

Intended outcome	Related Institutional Goal/Objective/Strategy	Action Steps	Method of Assessment (Who, What, When)	Results of Assessment	Proposed Changes and Recommendations for Improvement	Resources Needed for Proposed Changes
Undergraduate students will demonstrate proficiency in oral communication including using acceptable grammar and pronunciation in informal as well as formal presentations.	Objective 1.1 To promote and sustain the excellence of undergraduate programs that prepare students for careers and graduate studies.	Require students to take BIOL 3177 (Oral Communication Skills in Biology) to provide instruction, opportunities, and direction for developing discipline-based oral communication skills.	Students will be assigned topics upon which they must make oral presentations in BIOL 3177. Faculty instructors will evaluate presentations and provide written critiques to each student on a standardized evaluation form [Attachment A]. A student who does not make an acceptable first presentation will be advised of the problems detected, given suggestions on how to improve, and then will be	Thirteen students enrolled in Biology 3177 during the Fall 2001 semester. Each student was required to select a topic, gather information on the topic, organize the information into a coherent format, and orally deliver the presentation to the class and	Results from previous offerings suggest that with appropriate instruction students can effectively learn to communicate biological topics to other biology students and biologists. Subsequent offerings of this course will continue to allow	An additional projector costing about \$10,000 and a laptop valued at \$2000.

			required to make an additional presentation. A level of 80% acceptable presentations, including second attempts, will be considered an adequate success rate. Results will be judged by the faculty to determine if students require additional oral presentation experience, through added requirements in upper division courses or, perhaps, development of a capstone course addressing oral and written communication and analytical skills.	instructor. The instructor judged each presentation as acceptable and no second presentations were required. The oral communications course will be offered again during Fall 2002.	general comparisons to be made of the general porficiency of undergraduate students at oral communication. No improvements are warranted at present.	
Undergraduate students will demonstrate proficiency in the use of computers.	Objective 1.1 To promote and sustain the excellence of undergraduate programs that prepare students for careers and graduate studies.	Require students to take classes that develop computer competencies in word processing, spreadsheets, databases, internet searches, e-mail and library search and other discipline specific methodology. The instructor will complete a checklist indicating each student's proficiency in each of the indicated areas. [Attachment B]	The Department has developed a discipline based undergraduate computer proficiency course, BIOL 1450. We will assess the competency of each student by their success in completing independent assignments based on each of the computer competencies listed in Action Steps, as indicated by the instructor's evaluation on the checklist.	Fifty-nine students registered for Biology 1450 (Computer Skills in Biology) during the Fall and Spring semesters of AY 2001-2002. After a concise introductory period in which the demonstrated competencies required for satisfactory completion of the course were	While we strive for a success rate of 100%, there is little we can do if students refuse to attend class regularly or turn in assignments. No improvements are warranted at present.	We have requested \$30,000 for a small departmental computer lab. This would provide a facility for students to work on a variety of projects in several courses that require computer proficiency.

				<p>explained, students then worked to master each area required. Fifty-five (93%) students were judged to have satisfied all requirements for demonstrating at least minimal competency in all categories. Four students were evaluated as not having met minimum competency. All unsuccessful students attended class infrequently and spent little or no time preparing outside assignments. The successful completion rate is well above our generally accepted adequate success rate of 80%.</p>		
<p>Graduate students will demonstrate understanding of concepts and theory in their</p>	<p>Objective 4.1 To increase the University's commitment to research and creative activity.</p>	<p>Instructors in BIOL 5101 (Selected Topics in Biology), a seminar course, and other graduate courses</p>	<p>The Graduate Studies Committee will review results and determine if our students are meeting</p>	<p>Four sections of Biology 5101 (Current Topics) were offered</p>	<p>No improvements are warranted at present.</p>	<p>No additional resources requested at this time.</p>

<p>particular area and be able to effectively communicate verbally with others in the field.</p>	<p>Objective 5.2 To recruit and retain highly qualified graduate and undergraduate students.</p>	<p>that require oral reports, will evaluate each student's understanding of concepts/theory, and their ability to verbally communicate with others in topical discussions. The instructor will complete a checklist for each student's presentation [Attachment C]. All checklists will be filed in the Department Office and be available for review by the GSC at the beginning of the following semester.</p>	<p>required competencies. Instructors will provide checklists [Attachment C] for each student involved and the GSC will assess each student's performance to determine that each has a sound understanding of theory and concepts and can effectively communicate such in oral discussions. Students assessed as lacking in one or more areas will be made aware of the assessment and direction will be provided as to how to improve their skill in the area.</p>	<p>during the fall and spring of AY 2001-2001. Each offering was on a different topic area, but the format of each section was either open discussion of assigned readings or individual oral presentations. Participation in each class required understanding concepts and theories for the topic(s) covered and the ability to convey orally that understanding. All students participating in these classes were assessed as exceeding minimal competency in the areas set forth in Action Steps.</p>	
<p>Graduate students will be able to critically evaluate and assess the appropriateness of methods utilized and</p>	<p>Objective 4.1 To increase the University's commitment to research and creative activity. Objective 5.2 To recruit</p>	<p>Instructors in BIOL 5101 (Selected Topics in Biology) and other graduate reading courses will judge each student's ability to</p>	<p>The course instructors will evaluate the results indicated by the checklists to determine if the intended outcomes are being met. If</p>	<p>Four sections of Biology 5101 (Current Topics) were offered during the fall</p>	<p>No improvements are warranted at present. No additional resources requested at this time.</p>

<p>conclusions drawn by authors in published articles in the graduate student's area.</p>	<p>and retain highly qualified graduate and undergraduate students.</p>	<p>evaluate listed outcomes by verbally questioning the student and completing an evaluation checklist, or by having students write a critique of assigned articles addressing the listed outcomes. A checklist will be completed for each graduate student and deposited in the departmental office [Attachment C].</p>	<p>not, special assignments from faculty members will be given to graduate students, and faculty will work with individual students so that students can become proficient at critical analysis and will satisfy the intended outcomes.</p>	<p>and spring of AY 2001-2002. Each of these sections was offered by a different instructor and the topics were diverse, providing all students in the graduate program the opportunity to participate in topics close to their area of expertise or interest. Of the total 59 students enrolled, all were judged to be proficient in comprehension of theory/concepts and oral communication skills. Some of the more common problems students had were rate of delivery, pronunciation of Latin terms, monotone voice, and failure to make eye contact with audience.</p>	
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				Students were counseled about these problems and all subsequently improved to acceptable levels. In the future, we will continue to offer this type of seminar course over a variety of topics.		
Undergraduate students will demonstrate ability to collect and analyze biological data and communicate conclusions drawn from the analyses in grammatically correct, acceptable, written format.	Objective 1.1 To promote and sustain the excellence of undergraduate programs that prepare students for careers and graduate studies. Objective 1.3 To promote and support a student-centered academic community that enables students to achieve their educational goals.	Require instructors in biology laboratory courses with experimental labs, (e.g., Biology 3442 [Prin. of Animal Physiology] and Biology 3457 [General Ecology]) to grade lab reports in the areas of data gathering, analysis, conclusions, and clarity of presentations of written lab reports as a form of evaluating student competency. A checklist [Attachment D] and will be available to the GSC.	The Chair, instructors involved, and the faculty will review graded lab report checklists [Attachment D] to assess student performance and determine if students are developing the required skills to fulfill the expected competencies. If not, the area(s) in which students are not meeting expectations will be ascertained and that (those) area(s) will be targeted for greater emphasis and attention in laboratory assignments.	Student laboratory reports in Biology 3442 (Animal Physiology), Biology 3457 (General Ecology and Biology) were assessed for the points presented in the action steps. An introduction and thorough explanation of methods to be used in the laboratory were given. All students in each lab were judged as to their competency in	No improvements are warranted at present.	No additional resources requested at this time.

				the required procedures. Previously, we probably contributed to the development and improvement of such skills by including , the basic features of data gathering, analysis, and written presentation of conclusions as a major component of the laboratory of our Freshman majors course, Biology 1442.		
Upon graduation, biology graduates will be able to read, write, and analyze scientific papers.	Objective 1.1 To promote and sustain the excellence of undergraduate programs that prepare students for careers and graduate studies. Objective 1.3 To promote and support a student-centered academic community that enables students to achieve their educational goals.	Assign students in BIOL 3305, and other courses where readings and reports are required, to read topical papers and complete written reports. This action step complements the one above in assessing a student's ability to effectively communicate in written format.	Course instructors will assess each written report for details/aspects which indicate an acceptable analysis of assigned papers [Attachment E]. The instructors will determine if students' written reports include appropriate analysis and understanding of topics covered.	This course was first taught during Summer 2002 and enrolled 15 students. It is currently being offered (Fall 2002) for the second time with an enrollment of 30 students. A proficiency checklist has been developed [Attachment E] and will be used for the first time	No improvements are warranted at present.	This represents another course in which a departmental computer lab would be useful (see resources for Outcome 2).

				for students enrolled in the Fall 2002 class. Previously, 14 of 15 (93%) students successfully completed the course, learning how to conduct library research, gather data and perform statistical analysis, prepare graphs using various software packages, give oral presentations using PowerPoint software, and prepare CVs and letters of recommendation.		
Students will make appropriate choices in course work to meet the needs of their career goal.	Objective 1.1 To promote and sustain the excellence of undergraduate programs that prepare students for careers and graduate studies.	In addition to the counsel and direction provided by our undergraduate advisor, we will refer students to professors who are directly knowledgeable of career opportunities in the field/area that a student wishes to pursue or consider.	Individual professors will be listed with the undergraduate advisor for the various fields represented in the department. Professors will meet and council students and give them an overview of the activity in their research laboratories when appropriate.	In addition to the 700-1000 students, approximately 150 other students were referred to an appropriate faculty member for counseling and discussion of career options. Generally, students were	We have found that faculty input in career considerations by undergraduates is exceptionally meaningful and worthwhile. We will continue to follow the referral system. No improvements are warranted at present.	No additional resources requested at this time.

				pleased with the direct interaction with faculty and faculty input as to career choices.		
To provide non-tenured faculty with information on departmental procedures and direction/guidance related to required accomplishments necessary to satisfy progress toward attainment of tenure.	Objective 5.1 To attract and retain the highest quality faculty. Objective 1.3 To promote and support a student-centered academic community that enables students to achieve their educational goals.	Assign a group of tenured faculty members to mentor each non-tenured faculty member, including new hires.	The mentoring group will advise and direct new faculty in routine departmental procedures and provide direction in the progress toward tenure. The Chair will discuss the mentoring process with the new faculty member each year. Feedback from the advisees will be evaluated to determine if additional direction in the process should be added or if the process should be eliminated. Mentoring ultimately will be judged by success in gaining tenure.	We will continue to augment and refine the process. The Departmental Advisory Committee is currently re-evaluating the mentoring process. Discussions of mentoring issues with non-tenured faculty revealed that each was satisfied with the process as now performed. Some expressed displeasure with previous mentoring and passing of information, but none were displeased with the procedures now in place. All thought the system in place was working	No improvements are warranted at present.	No additional resources requested at this time.

<p>Increase amount of extramural funding by 15% a year.</p>	<p>Objective 4.1 To increase the University's commitment to research and creative activity.</p>	<p>Encourage faculty to increase grant submissions and reward successful applicants with pay increases.</p>	<p>Grant submissions and success will be tracked each year. The Chair will require that each faculty member provide a list of grant proposals submitted and proposals funded each year, allowing the percent increase in funding to be readily computed.</p>	<p>well. In AY 2000-2001 29 proposals were submitted to extramural agencies and 9 were funded; a total of \$206,611 was delivered to the department during this period. In 2001-2002 fourteen proposals were submitted to extramural agencies and 10 were funded; a total of \$1,240,857 was delivered to the department during this period. This represents a 6-fold increase over the previous year.</p>	<p>The faculty will continue to be encouraged to submit extramural grant proposals. The department and chair will try to facilitate proposal preparation whenever possible.</p>	<p>To continue to augment the level of funding, it will be necessary that we hire the appropriate faculty that are capable of landing large grants. Retention of young, talented faculty is crucial and faculty salaries remain a primary area of concern. We have recently lost 3 exceptional young faculty members that have been lured to other institutions (Drs. Payne, Phillips, and McAllister). Each of these persons had been awarded large grants within 1-2 years of their departure from UTA. Additional monies are required to bring our salaries into line with other</p>
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						institutions. As the proportion of faculty able to attract large grants increases, it will not only increase the amount of incoming dollars, but will also tend to stabilize at a high level the amount of funding for any given year, in contrast to the variable annual funding levels experienced by the department over the last 5 years
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